BREEDING PEARLS

BY

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Many residents in Singapore, and more especially Members of this Society, have heard of "Breeding Pearls," or Pearls which, as alleged, have under certain conditions the power of reproducing fresh specimens. My attention having been drawn to the subject shortly after my arrival in the Colony, I made enquiries in all likely quarters, and propose to lay the results before this meeting. When I commenced these enquiries I had no particular theory to support either in favour of, or opposed to, this apparently incomprehensible matter. And what I now intend to do is to shortly state (1) What is known of the origin of these objects by their possessors, and the process by which they are held to reproduce themselves; (2) The evidence I have been able to collect respecting their existence and a description of what I have myself seen; (3) The objections raised against the possibility of such an alleged reproduction and, (4) Some concluding remarks regarding certain other natural occurrences which may be held to confirm the possibility of an event as yet inexplicable by even advanced scientists.

The Pearls in question are reputed to come chiefly from Borneo and Java, although found in nearly all islands of the Archipelago, and even in Singapore; there does not appear to be any specific native name for them as distinguished from ordinary pearls. As regards appearance, those shewn me resemble the ordinary jeweller's pearl in look, though slightly more irregular in shape. The largest of regular shape I have yet seen is something over three sixteenths of an inch in diameter, though an irregularly formed one is over $\frac{1}{4}$ inch in length, by $\frac{3}{16}$ths. in width, while the smallest is a mere pin-point of microscopic dimensions. As regards substance, they are alleged to present exactly the same laminated section as the ordinary pearl when cut, and a lady, resident in this Colony, informs me that

Professor Huxley examined one at her request, and subjected it to numerous tests, of which he reported the result to be that it was absolutely indistinguishable from the ordinary pearl used for jewelry.

The process by which reproduction takes place involves only very simple preparations. Four or five large sized pearls (most people have begun with three) are placed in a small chip or other box with as many grains of uncooked white rice as the experimenter chooses—from 15 to 30 are usually used. Absolute freedom from disturbance is, by some, alleged to be necessary for the formation of the new pearls, while others deny that this makes any difference if they are not unduly handled or shaken. If examined at the end of a certain period (about a year) objects resembling small seed pearls will be found strewn about the bottom of the box, while in many cases the original pearls themselves will be found to have increased in size. If again left untouched for a further period of six months or a year, and then examined, some of the seeds will be found to have become larger, while fresh seeds will have formed. Each grain of rice now presents a curious appearance. A small circular *bite* seems to have been taken from the end of each, the number of seed pearls agreeing with the number of grains thus affected.

The lady resident above referred to having kindly offered to shew me her collection, I saw it at the end of December last. It consisted of about five large or medium sized pearls and, as nearly as could be estimated, about 120 small sized pearls, varying from the most minute speck to a size large enough for use in certain descriptions of jewelry. Every grain of rice was, so far as I could see, marked as before described—looking in fact as if some beetle had gnawed away a portion of its end. She informed me that the larger pearls she shewed me had been in their present box for about 20 years; that she had only put four or five into the box when it was just closed; that, except to shew to persons interested, the box had always been kept shut; that any tampering with it had been impossible—to say nothing of the fact that no one was likely to have strewn seed pearls in it for the purpose of playing a practical joke which might not even attract attention for a lengthened period.

Shortly after seeing the pearls above mentioned, good fortune led me to enquire of Dr. Rowell, the principal Medical Officer of Singapore, what he knew about the matter. It so happened that I could not have applied to better authority, Mrs.——having for some years possessed and bred the pearls in question. I give her experience in her own words, her kindness in furnishing the

account being most generously supplemented by her sending the box containing the pearls for my inspection. Mrs.——writes as follows:—"I had three 'Breeding Pearls' given me in June or "July 1874. On the 17th July I shut these three up with a "layer of cotton wool above and below them and some few "grains of a very fine rice, (called here "Pulot" rice?) On the "14th of July 1875, we opened the box in the company of two "or three friends and we discovered *twelve* of sizes—the three "original ones standing out distinctly by their greater size; "though some of the newly bred ones were by no means insig- "nificant to look at. One or two were about the size of a pin's "head and perfectly round. The rice looked crumbly and worm- "eaten.

"The size of the three breeding pearls both my husband and I "thought considerably larger. I had made a rough drawing "of their appearance and size, and you can see the boxes for "yourself.

"I have started afresh again with five big ones lately given "me, three of the old originals, and I think the fifth is one of "those bred in my box. But this I could not vouch for.

"I send the two boxes and shall be glad to have them back "when you have done with them."

I may add that the rice in the boxes sent was all "bitten away" as in the other case. I feel certain that the "bite" has been produced by some living agency, and that it could not have been produced in any other way.

Having been informed that, Mrs.——of the local Girls' school, could give me some information on the matter I called on that lady and she kindly told me all she knew. This was exactly to the same effect as above described, with the further item that "breeding pearls" were in all cases originally taken from pearl oysters, and that when about to "breed" a small black speck made its appearance on some portion of the pearl, which speck continued to be visible so long as the breeding process continued. I then wrote to a gentleman who I was informed had himself bred a considerable number—Mr. H. B. Woodford—who very kindly furnished me with a series of notes which I transcribe in almost his own words:—

Breeding pearls are found in several of the oyster and clam species, including those known as Tridacnæ with a fan shaped shell. The shells yielding them abound chiefly on the coast of Borneo, but they are also found throughout the Malayan Archipelago and even in Singapore. I found one at Tanah Merah

Kechil beach. Many people believe that they come to better perfection if kept in sea water. I have reared mine in closed boxes, with Pulot rice strewn losely around them and the whole covered with a layer of cotton silk, though Mr. L. J. Scheerder has successfully reared some in fresh water. I am not able to say what is the average percentage of these pearl-producing shells, but out of 15 or 20 I picked up at Tanah Merah I only came across one. Mr. P. Marcus tells me he has extracted them from all descriptions of bivalve shells, the larger the shells the larger being the pearls. In one case he took a very large one from the *Tridacna gigas*, or giant clam, (of which a specimen may be seen at the foot of the stairs leading to the Raffles Library.)

The pearls when discovered are usually found embedded close to the valves of the shell, though in some cases found adhering to the fish. There appears to be no certainty as to size, the breeding pearls varying like the ordinary ones, though the rule as to the largest being contained in the largest shells does not in the latter case hold good. They are almost invariably spherical when found, but, when commencing to breed, change their shape to a more or less irregular oval, with layers of scales on them visible to the naked eye. In some cases the scales are themselves spherical.

As regards the time occupied in "breeding," Mr. Woodford names a very much longer period than that specified by the other correspondents who have so kindly answered my enquiries. He states that it usually takes eight years for a seed pearl to increase to four times its original diameter, i. e. about $\frac{1}{6}$th of an inch, though he has seen one over $\frac{1}{4}$ inch in measurement produced in that period.

After a certain time (which appears to be *uncertain*) "breeding pearls" die and change their lustrous colour to a dirty flake white, the outer scales appearing to have peeled off. Mr. Woodford attributes their formation to insects, though this otherwise feasible theory is at variance with all received beliefs as to the formation of the pearl within the oyster.

Several other residents have informed me that they have seen breeding pearls and their young (if the term be admissible) under circumstances which left no doubt as to the *bona fides* of their exhibitors. I have however doubtless given names enough to help us to a dispassionate discussion of this curious freak of nature.

The evidence *against* the existence of "Breeding Pearls" may be classed under two heads, viz; the results of positive experiment; and a scientific demonstration of the absolute impossibility of Pearls breeding Pearls. As regards the former, Dr. Robertson, well known to all members of this Society, allows me to use his name in stating the following facts. Having been informed that not only would pearls breed, but that a resident in Singapore had actually added to her income by selling the pearls thus produced, he obtained four or five specimens which were carefully sealed up at the Singapore Dispensary in a box, with grains of rice, as directed by the donor. This operation was performed by Dr. Robertson in the presence of Dr. R. Little and Mr. Jamie and the box was then put away. At the expiration of the period directed, the box was opened in presence of those gentlemen (the seal being intact) and the result was—nil. No trace appeared either of pearls, or of anything which could form a nucleus around which a pearly growth might in time take place. So far as it went, that experiment was conclusive and others have related to me a similar experience. Mr. C. K. E. Woods, Solicitor to whom I had written for a book supposed to contain a notice of these pearls answered as follows:—

"I have not found the book you want, but I have heard from "several natives and also from a few Europeans that pearls do "breed when packed in a box or bottle. I tried the experiment "once but did not succeed in increasing the stock."

So far as we have yet got then we have the positive testimony of residents, whose words are beyond cavil, that these pearls *do* breed. I have seen with my own eyes a collection of pearls which either "grew," or were put where they are by human hands. To say nothing of the fact that none of my witnesses would invent a gratuitous falsehood, I am able to cite six cases, in three of which the parties, without any previous communication on the subject, certify to the same occurrence. Against this we have the equally reliable testimony of others that in their own cases attempts to "breed" such pearls have been downright failures. Negative evidence is, however, always weaker than positive. Some year or two ago, for instance, I and some other friends imported a selection of English flower seeds. Not one of 32 varieties in my own case (and in the majority of others) came up, but one recipient was more fortunate. Now all our negative evidence that the seeds would *not* grow was of course set aside by the simple fact that in one case they *did* grow. Flower seeds are of course supposed to grow, and it may be urged that flower seeds and pearls can hardly be classed together as regards reproductive qualities. But the incident may serve as an illustra-

tion of the difference between negative and positive evidence. I must confess that twenty failures to breed pearls would, to me, be quite set aside by one successful experiment—and so, I suppose, they would to the other members of this Society.

The scientific objections to the possibility of pearls "breeding" cannot however be overlooked. The oyster or mussel pearl is, as everybody knows, usually the result of a mucus secretion deposited by the animal on some (it may be microscopic) foreign substance, though I believe this foreign substance is not always to be detected by analysis. Now under no conceivable circumstances can mucus *breed* mucus when it has once hardened into the lustrous nacre of a pearly surface. Without, as I have said, wishing to support any specific theory, I should be inclined to suspect that the pearls produced result from the labours of some insect which existed in the original oyster, and as a foreign irritant body caused the deposition of a pearly secretion; and it may be that this insect exists and breeds in rice under certain circumstances: and that the original pearls have very little, or perhaps nothing, to do with the production of new ones.

Finally it may be worth while to cite another instance of an apparently incomprehensible freak of nature in a somewhat similar way. Mr. Frank Buckland, the well known naturalist, in the 2nd Volume of his "Curiosities of Natural History," relates (p. 128), that his attention was excited by an advertisement setting forth that an old China dinner-plate, which had been in the possession of its owner's family for nearly 300 years, had broken out in an eruption of crystals, the forms of which resembled shrubs, flowers, &c. It was put on exhibition at one shilling a head, and Mr. Buckland went to see it. "On examination with "a magnifying glass," he says, "I observed numerous excres- "cences of a whitish opaque substance, apparently growing or "extending themselves out of the centre and rim of the plate, "each supporting upon its surface a portion of the actual enamel "of the plate. The largest eruption (if it may be so called) is "about the size and shape of a fourpenny bit, and it has raised "up a portion of the enamel above the surface of the plate to "about the height represented by the thickness of a new penny "piece" Mr. Buckland then gives further particulars of this singular growth, concluding with the remark "I have not the sligh- "test doubt that this is a natural production; that the material "is of a mineral parisitic growth resulting from some chemical "decomposition of the clay of which the plate was originally "formed." Now, it will, I think, be allowed on all hands that the idea of a China plate 300 years old producing a "growth" of any sort is as unexpected and unexplainable a phenomenon as

can well be imagined. I have cited it simply as a parallel to the subject under notice—the apparently spontaneous production of pearls. Further information on this latter subject will doubtless be acceptable to the Society. Granting the truth of all that is alleged respecting Breeding Pearls, we have not at present got beyond Topsy's "'Spect they growed."

I may add that I have been informed that both Sir J. Brooke and Admiral Keppel have made mention of Breeding Pearls in their published works. I can only say that a tolerably thorough search through the Raffles Library has not enabled me to find the notices in question, and the present Raja Brooke of Sarawak told me he did not know of them. It is of course possible that, amidst the hurry of more important avocations, I have missed them. If so I shall be greatly indebted to any one who will point them out.

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